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动物分类学报

DESCRIPTION OF ONE NEW GENUS AND TWO NEW SPECIES OF ANTHOMEDUSAE FROM MINNAN-YUEDONG INSHORE UPWELLING AREA, CHINA (FILIFERA, PROTIARIDAE; CAPITATA, CORYMORPHIDAE)

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Abstract Two new taxa Octovannuccia zhangjinbiaoi Xu, Huang et Lin, gen. nov. et sp. nov. and Halitiarella nudibulbus Xu, Huang et Guo, sp. nov. are described based on specimens from Minnan-Yuedong upwelling area. The type material is deposited at the Third Institution of Oceanography, SOA, Xiamen, China.
Key words Anthomedusae, Taxonomy, Minnan-Yuedong upwelling area, Octovannuccia zhangjinbiaoi, Halitiarella nudibulbus

1 Introduction

Minnan-Yuedong inshore upwelling area is located in the southwest of Taiwan Strait. It is connected with the north of South China Sea and Minnan-Taiwan Bank at Taiwan Strait. The inshore fauna of the Anthomedusae (medusa stage) from Taiwan Strait is fairly well known (summarized in Xu & Lin, 2008; Huang et al, 2009; Xu et al, 2009a, b). However, there are new published data on the inshore upwelling area fauna from Minnan-Yuedong.

This special project plays an important role in researching the causes of the formation and the disappearance of Minnan-Yuedong inshore upwelling. It is attend carefully to study among planktonic groups, analysis of planktonic samples has also allowed exhaustive investigation of medusae from May to June 2009. Based on data from two seasonal oceanographic cruises in Minnan-Yuedong inshore upwelling area, two new taxa, Octovanuccia zhangjinbiaoi Xu, Huang & Lin, gen. nov. et sp. nov., and Halitiarella nudibulbus Xu, Huang et Guo, sp. nov. were identified and they were described below.

2 Material and Methods

Specimens were collected during planktonic cruises carried out at different stations in the Minnan-Yuedong upwelling area (21.6-24.3 °N, 115.7-118.7 °E) during the months of May to June 2009. All planktonic samples were collected using a 80 cm diameter zooplankton net with a mesh size of 0.505 mm, by vertical towing from bottom to surface. Samples were preserved in 5% buffered seawater formalin. They were examined using stereoscopic and light microscopy, and the taxonomic identifications were made on the literature specified in the references.

3 Taxonomic Account of the New Genus and Species

Class Hydroidomedusa Claus, 1877
Subclass Anthomedusae Haeckel, 1879
Order Filifera Kühn, 1913
Family Protiaridae Haeckel, 1879

Halitiarella nudibulbus Xu, Huang et Guo, sp. nov. (Figs. 1-2)

Type material Five specimens collected from Minnan-Yuedong upwelling area, southern part of the Taiwan Strait, station A25 (22.8 °N, 118.1 °E; depth 32 m), 11 June 2009, Xiang Peng (SOA). Holotype (TS045) and paratype (TS046-049) were deposited at the Third Institute of Oceanography, SOA, China.

Etymology. Nudibulbus, Latin, means naked-bulb. The specific name refers to the interradial marginal bulbs, devoid of tentacles.

Diagnosis. Protiaridae without apical projection; exumbrella with scattered nematocyst clusters; with 4 perradial tentacles and 4 interradial marginal bulbs, all with abaxial ocelli; with 2-3 short, solid marginal cirri between perradial tentacles and interradial marginal bulbs.

Description. Umbrella 0.7-1.1 mm high, 0.7-1.0 mm wide, apex blunt, with no apical projection, mesoglea very thick, especially in the apical region;

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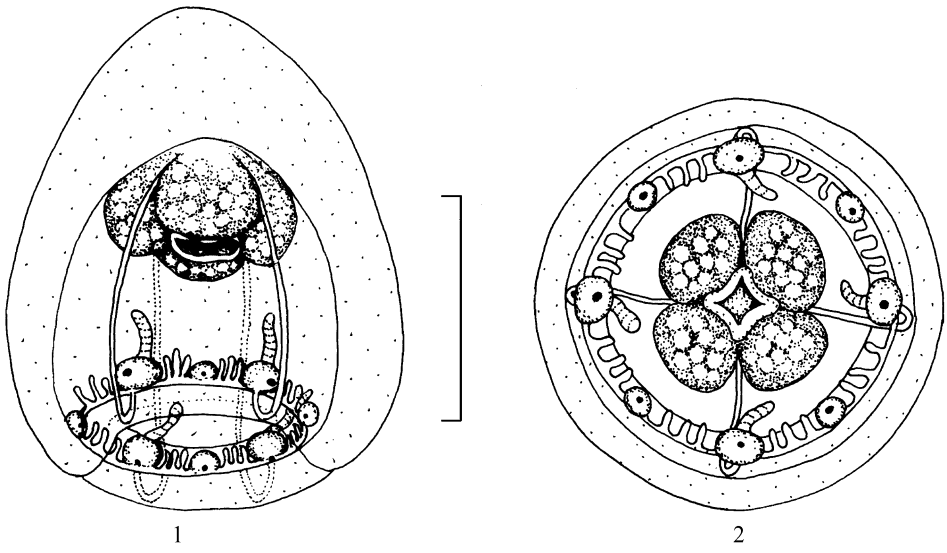
exumbrella with scattered nematocyst clusters; manubrium broad and long, about 1/3 the length of subumbrellar cavity; mouth simple, broad, aperture cruciform; with 4 straight radial canals, and 1 ring canal; with 4 large, interradial, mass-like gonads, almost completely hiding the manubrium; gonads filled with numerous round, granular sex cells; with 4 perradial, hollow marginal tentacles, with nearly elliptic basal bulbs, and abaxial ocelli; with 4 nearly spherical, interradial marginal bulbs, comparatively smaller than perradial ones, devoid of tentacles, but provided with abaxial ocelli; with 2-3 short, solid marginal cirri between perradial and interradial marginal bulbs, with unthickened bases and no abaxial ocelli; velum moderately broad.



Figs. 1-2. Halitiarella bulbus Xu, Huang et Guo, sp. nov. 1. Lateral view. 2. Oval view. Scale bar = 0.5mm

Discussion. This new species has smooth, interradial gonads; umbrella margin with 4 perradial tentacles; mouth with 4 simple lips; marginal cirri; abaxial ocelli on marginal bulbs; 4 radial canals. These features place this medusa in the Family Protiaridae Haeckel, 1879, genus Halitiarella Bouillon, 1980 (Bouillon, 1980; Bouillon & Boero, 2000).

Previously, only 2 species were included in the genus, i. e. Halitiarella ocellata Bouillon, 1980 and H. apicea Xu & Huang, 2004 (Xu & Huang, 2004). The new species differs from them in having: 1) umbrella without apical projection, and exumbrella with scattered nematocysts; 2) 4 perradial tentacles and 4 interradial marginal bulbs, all with abaxial ocelli on marginal bulbs; 3) 2-3 short, solid marginal cirri between perradial tentacles and interradial marginal bulbs, without ocelli (Table 1).

Octovannuccia Xu, Huang et Lin, gen. nov.

Diagnosis. Corymorphidae without exumbrellar cnidocyst tracks; with 8 radial canals, of which 4 are broad and end in one large, elongate conical bulb; a single marginal bulb bears a slender, hollow tentacle, ending in a large cnidocyst knob; the remainder three bulbs are smaller, devoid of tentacles, but armed with cnidocysts; remainder 4 radial canals narrow, without marginal bulb, ending in ring canal; manubrium not extending beyond umbrella margin; gonad undivided, surrounding nearly the whole length of manubrium.

Key to the known species of the Genus Halitiarella.

1. Umbrella with large apical projection; 4 large perradial tentacles and 4 small interradial tentacles, with abaxial ocelli on bulbs; with 2-3 short, marginal cirri between tentacles ····· H. apicea
   Umbrella without apical projection ····· 2
2. Exumbrella without nematocysts; with 4 perradial tentacles, with adaxial ocelli on tentacle bulbs; with 3-4 short marginal cirri between tentacles ····· H. ocellata
   Exumbrella with nematocysts; with 4 large perradial tentacles and 4 small interradial marginal bulbs, all with abaxial ocelli on marginal bulbs; with 2-3 short marginal cirri between perradial and interradial marginal bulbs ····· H. nudibulbus Xu, Huang et Guo, sp. nov.

Order Capitata Kühn, 1913.

Family Corymorphidae Allman, 1872.

Type species. Octovannuccia zhangjinbiaoi sp. nov.

Etymology. The generic name Octovannuccia recalls the genus Vannuccia, but differs in having 8 radial canals instead of 4.

Discussion. This new genus has the main characters of the family Corymorphidae. The family Corymorphidae as redefined by Petersen (1990) comprises tow groups of genera: the Euphysa line (Euphysa and Siphonohydra) and Corymorpha line (Gymnogonos, Corymorpha, Branchiocerianthus and Fukaurahydra), and the revised generic concept of Corymorpha includes genera like Euphysora, Vannuccia, Gotoea and Eugotoea (Peterson, 1990). The genus is

now mainly defined through its polyp phase which offers better characters. Some of the characters of the medusa given in Peterson's diagnosis may be problematic (Schuchert, 1996). Further investigation had shown that the family Corymorphidae comprises the following genera (medusa stage): Corymorpha M. Sars, 1835 (= Analthaea Schmidt, 1852); Euphysora Maas, 1905; Eugotoea Margulis, 1989; Gotoea Uchida, 1927; Paragotoea Kramp, 1942; Vannuccia Brinckmann-Voss, 1967 (= Altairina Vargas-Hernández & Ochoa-Figueroa, 1991); Rhabdoon Keferstein & Ehlers, 1861 (= Yokovia Margulis, 1989) (Kramp, 1961, 1968; Bouillon et al, 2006; Stepanjants & Kosobokova, 2006). So we used the system of Bouillon et al (2006) because of it towards a natural classification. The new genus differs from the other genera of Corymorphidae in having 8 radial canals instead of 4, and is similar to the genus Vannuccia, except for the presence of 8 radial canals. The new genus differs from the latter in umbrella margin, which is at right angle to its vertical axis; is also have 1 narrow marginal tentacle, with the proximal part elongated conical, the central part narrow, ending in large, oval to elliptical swelling armed with cnidocysts; the remainder 3 marginal bulbs are comparatively smaller than the tentaculate bulb, and are provided with cnidocyst spurs. On the other hand, the genus Vannuccia is characterized by medusae with slightly asymmetrical umbrella margin; with a swollen marginal tentacle, hollow for half its length and ending in long, large, oval to cylindrical swelling, armed with cnidocysts; bulb opposite tentacle slightly larger than the other ones, without cnidocyst spurs (Table 2).

Octovannuccia zhangjinbiaoi Xu, Huang et Lin, sp. nov. (Fig. 3)

Type material. Three specimens collected from Minnan-Yuedong upwelling area, southern part of the Taiwan Strait. Holotype and paratype are deposited at the Third Institute of Oceanography, SOA. The holotype (TS050), one specimen from station A34 (23.1°N, 116.9°E; depth 30 m), 13 June 2009, XIANG Peng (SOA). Paratype (TS051-052), 2 specimens from station A54 (22.1°N, 116.7°E; depth 77 m), 14 June 2009, XIANG Peng (SOA).

Etymology. This species is dedicated to Prof. ZHANG Jin-Biao for his relevant contribution to the knowledge of pelagic Hydroidomedusae in China's Seas.

Key to the known genera (medusae) of Family Corymorphidae.

1. With 8 radial canals; one developed marginal tentacle, ending in a large knob of cnidocysts, and three small marginal bulbs; gonad simple, annular ··· Octovannuccia Xu, Huang et Lin, gen. nov.
   With 4 radial canals ····· 2
2. With 1 fully developed marginal tentacle ····· 3
   Usually with 3 short or rudimental marginal tentacles and 1 long, fully developed marginal tentacle, different in structure ····· Euphysora
3. Exumbrella divided in 4 prominent leaf-shaped facets separated by 4 longitudinal large and deep grooves; umbrella without marginal bulbs; marginal tentacle ending in a cnidocyst capitation ····· Eugotoea
   Exumbrella with uniform surface ····· 4
4. Umbrella margin slightly oblique to vertical axis; one developed marginal tentacle, short and thick, ending in a large knob of cnidocysts and three small marginal bulbs ····· Vannuccia
   Umbrella margin at right angle to vertical axis ····· 5
5. Gonads on manubrium and on 4 sausage-like interradial manubrial pouches ····· Gotoea
   Gonads simple; manubrium without interradial pouches ····· 6
6. With 1 long moniliform tentacle; umbrella with pointed apical process ····· Corymorpha
   With 1 marginal tentacle, ending in a simple cnidocyst capitation or in clusters of cnidocyst capitation; umbrella without pointed apical process ····· 7
7. Only 1 marginal bulb bearing a single long marginal tentacle with terminal ramification ending in numerous cnidocyst clusters ····· Rhabdoon
   With 1 well developed tentacle terminating in large cnidocyst knob and 3 very large marginal bulbs without tentacles, but with cnidocyst spurs ····· Paragotoea

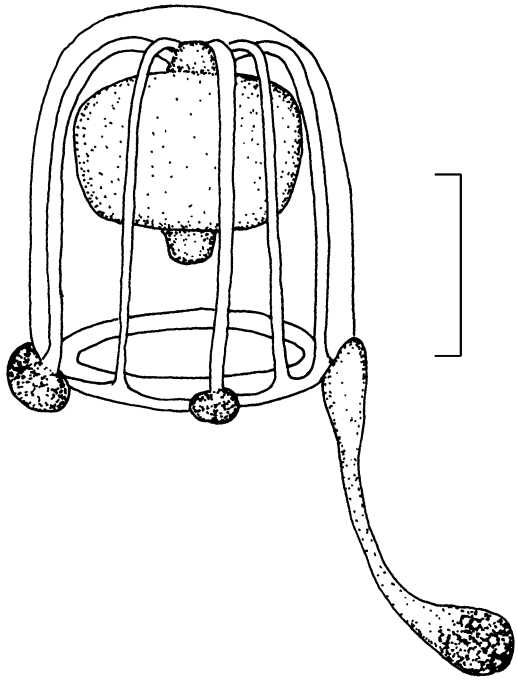


Fig. 3. Octovannuccia zhangjinbiaoi Xu, Huang et Lin, sp. nov. Scale bar = 0.5 mm

Diagnosis. Corymorphidae without apical process and exumbrellar tracks of nematocysts; mesoglea very thin; umbrella margin at right angle to the vertical axis; with 8 radial canals, of which 4 are broad and end in marginal bulbs; one bulb comparatively larger, elongated conical, bearing a slender, hollow tentacle, ending in a large cnidocyst knob; remainder three marginal bulbs small, without tentacles, but armed with cnidocysts; remainder 4 radial canals narrow, without marginal bulbs, ending in ring canal; gonad undivided, surrounding nearly the whole length of

manubrium.

Description. Medusa with bell-shaped umbrella, 0.8-1.2 mm high, higher than wide, without apical process; mesoglea moderately thin; bell margin at right angle to vertical axis of umbrella; without exumbrellar tracks of nematocysts; manubrium cylindrical, length half to two-thirds of bell height, mounted in the center of the subumbrellar cavity; mouth simple, circular; gonads encircle manubrium for almost all its length, leaving only a small free part above mouth; 8 radial canals, of which 4 broad ending in respectively 1 large, elongated conical, and 3 small marginal bulbs; largest bulb bearing a single, slender tentacle, ending in long, large, oval cnidocyst swelling; remainder 4 radial canals narrow, not ending in marginal bulbs.

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Xu, Z-Z, Huang, J-Q, Lin, M and Guo, D-H 2009b. Study on genus Janiopsis from the Taiwan Strait and its adjacent waters, China (Filifera, Pandeidae). Acta Zootaxonomica Sinica, 34 (4): 847-853. [动物分类学报]

闽南-粤东近海上升流区花水母亚纲一新属二新种记述 (丝螅水母目, 原帽水母科; 头螅水母目, 棒状水母科)

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摘 要 记述了闽南-粤东近海上升流区花水母亚纲原帽水母科 Protiaridae Haeckel, 1879 裸球拟海帽水母 1 新种 Halitiarella nudibulbus Xu, Huang et Guo, sp. nov. 与棒状水母科 Corymorphidae Allman, 1872 张氏八辐端粗水母 1 新属 1 新种 Octovannuccia zhangjinbiaoi Xu, Huang et Lin, gen. nov., sp. nov.。模式标本保存在国家海洋局第三海洋研究所。

裸球拟海帽水母, 新种 Halitiarella nudibulbus Xu, Huang et Guo, sp. nov. (图 1～2)

鉴别特征 水母伞无顶突, 外伞有分散刺胞; 伞缘有 4 条主辐位触手和 4 个间辐位缘基球, 所有触手和缘基球有背轴眼点; 主辐位触手与间辐位缘基球间具 2～3 条短的实心缘丝。

正模 (TS045) 和副模 (TS046-049), 闽南-粤东上升流区 A25 站 (22.8°N, 118.1°E), 水深 32 m, 2009-06-11, 项鹏采 (第三海洋研究所)。

词源: 新种以拉丁词 nudibulbus 为种名, 意为裸球, 指该种间辐位缘基球无触手。

八辐端粗水母, 新属 Octovannuccia Xu, Huang et Lin, gen. nov.

鉴别特征 水母外伞无刺细胞带, 8 条辐管, 4 条辐管宽, 辐管基部有大而延长锥状的触手基球, 其中 1 个触手基球有 1 条软而空心的触手, 触手末端具 1 个大的刺胞球, 另 3 个触手基球小, 具浓密刺胞, 无触手; 另 4 条辐管窄, 与环管相连, 无触手基球; 垂管不超出伞缘; 生殖腺围绕整条垂管。

词源: 新属以拉丁词 Octovannuccia 为属名, 意指该属与端粗水母属 Vannuccia Brinckmann-Voss, 1967 近似, 但新属有 8 条辐管, 不同于具 4 条辐管的端粗水母属。

模式种: 张氏八辐端粗水母, 新属新种 Octovannuccia zhangjinbiaoi Xu, Huang et Lin, gen. nov., sp. nov. (图 3)

* 通讯作者.

鉴别特征 同属的特征。

正模 (TS050), 闽南-粤东上升流区 A34站 (23.1°N, 116.9°E), 水深 30 m, 2009-06-13; 副模 (TS051-052), 闽南-粤东上升流区 A54站 ((22.1°N, 116.7°E), 水深 77 m, 2009-06-14, 项鹏采 (第三海洋研究所)。

词源: 新种以拉丁词为 zhangjinbiaoi种名, 旨在纪念张金标研究员, 他在中国水螅水母研究方面有很高的学术造诣。

关键词 花水母亚纲, 闽南-粤东上升流区, 张氏八辐端粗水母, 裸球拟海帽水母.
中图分类号 Q959.13

新书介绍

《中国贸易龟类检索图鉴》简介

中国龟类资源丰富, 有长期被食用、观赏、养殖等历史。近 20、30年来, 我国龟类资源有明显被过度利用的趋势, 然而从国外大量进口龟以满足国内的需求, 会影响到其他国家的龟类资源, 这一趋势已引起国内外相关专家的极大关注。

生物多样性保护源于对物种的有效鉴定, 由于大多数龟类相似性很高, 没有检索的引导, 仅依靠查阅图, 很难准确判断和鉴定, 特别是非专业人士。

由史海涛教授主持编著的《中国贸易龟类检索图鉴》(Identification Manual for Traded Turtles in China), 对在中国被贸易的龟类 126个种和亚种进行了系统介绍, 几乎包括了我国已知的全部种和亚种, 以及由国外进入我国经常被贸易的物种。

该书主要包括两部分, 物种检索和物种简介。其中物种检索包括图解名词、龟类的测量和图解检索表; 物种简述包括每个物种的名称、保护级别、鉴别特征及分布。

该《图鉴》图文并茂, 物种检索部分主要使用典型和稳定的体色和外形特征做成检索系统, 为了便于读者对检索特征的理解, 每项检索特征均配有相关彩色照片 (照片检索表), 共有高清晰度各类原色实体照片图数百张。物种简介部分所涉及的每个种均有中文名、学名、英文和中文俗名, CITES、红色名录和在我国的保护级别, 典型鉴别特征, 与相似种的比较, 在国内外的分布等。

最后还附有参考文献, 拉丁名索引, 中文名索引, 物种保护级别, 执法条例选摘等。为方便执法, 还选摘了《中华人民共和国宪法》、《中华人民共和国陆生野生动物保护实施条例》等 6部法律法规中与野生动物保护、执法量刑等有关的条目以供参考。

该《图鉴》为 16开本, 共 166页, 由中国大百科全书出版社出版; 对于从事龟类研究的专业人员和海关、林业、渔政、工商执法人员是一本很好的参考书, 也是龟鳖类养殖爱好者参考和实用性很强的专著。

张春光 黄祝坚
中国科学院动物研究所